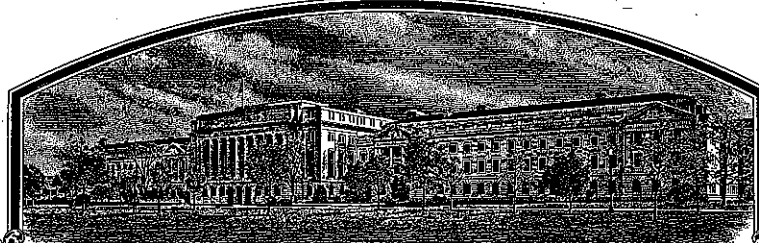


No.

200800301



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

The United States Government, as represented  
by the Secretary of Agriculture

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC FURNISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE APPLICANT(S) SHALL EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED IN THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT, COMMON

'Anton'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this ninth day of December, in the year two thousand and eight.

Attest:

Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE  
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER The Government as United States Department of Agriculture, Agricultural Research Service, represented by the Secretary of Agriculture 4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) 314 Biochemistry Hall, East Campus, University of Nebraska, Lincoln, NE 68583		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME NW98S097	3. VARIETY NAME Anton
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) USDA agency		5. TELEPHONE (include area code) 402-472-1490 6. FAX (include area code) 402-472-4020	FOR OFFICIAL USE ONLY PVPO NUMBER #200800301 FILING DATE JUNE 3, 2008
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) Robert A. Graybosch		FILING AND EXAMINATION FEES: \$4,382.00 DATE 5/27/08 CERTIFICATION FEE: \$768.00 DATE 9/12/08	

11. TELEPHONE (Include area code) 402-472-1563	12. FAX (Include area code) 402-472-4020	13. E-MAIL bob.graybosch@ars.usda.gov
14. CROP KIND (Common Name) common wheat	16. FAMILY NAME (Botanical) Poaceae (Gramineae)	18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (OPTIONAL) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERCIALIZATION.
15. GENUS AND SPECIES NAME OF CROP Triticum aestivum	17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act) <input type="checkbox"/> YES (if "yes", answer items 21 and 22 below) <input checked="" type="checkbox"/> NO (if "no", go to item 23) <input type="checkbox"/> UNDECIDED
19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse) a. <input type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input type="checkbox"/> Exhibit B. Statement of Distinctness c. <input type="checkbox"/> Exhibit C. Objective Description of Variety d. <input type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input type="checkbox"/> Exhibit F. Declaration Regarding Deposit g. <input type="checkbox"/> Voucher Sample (3,000 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) h. <input type="checkbox"/> Filing and Examination Fee (\$4,382), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)		21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED 22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS. <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED (If additional explanation is necessary, please use the space indicated on the reverse.)
23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)		24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)

25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER Robert A. Graybosch		SIGNATURE OF OWNER	
NAME (Please print or type) Robert A. Graybosch		NAME (Please print or type)	
CAPACITY OR TITLE Research Geneticist	DATE 05-10-2008	CAPACITY OR TITLE	DATE

**GENERAL INSTRUCTIONS:** To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be **received** in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E, F; (3) for a tuber reproduced variety, verification that a viable (*in the sense that it will reproduce an entire plant*) tissue culture will be deposited and maintained in an approved public repository; and (4) payment by credit card or check drawn on a U.S. bank for \$4,382 (\$518 filing fee and \$3,864 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice). **NEW:** With the application for a seed reproduced variety or by direct deposit soon after filing, the applicant must provide at least 3,000 viable untreated seeds of the variety *per se*, and for a hybrid variety at least 3,000 untreated seeds of each line necessary to **reproduce** the variety. Partial applications will be held in the PVPO for not more than 90 days; then returned to the applicant as un-filed. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. **Retain one copy for your files.** All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a payment by credit card or check payable to "Treasurer of the United States" in the amount of \$768 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

**NOTES:** It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

**Plant Variety Protection Office**  
**Telephone:** (301) 504-5518 **FAX:** (301) 504-5291  
**General E-mail:** PVP@mail.usda.gov  
**Homepage:** <http://www.ams.usda.gov/science/pvpo/PVPindex.htm>

#### **SPECIFIC INSTRUCTIONS:**

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and **provide evidence** that the permanent name of the application variety (even if it is a parental, inbred line) has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: U.S. Department of Agriculture, Agricultural Marketing Service, Livestock and Seed Programs, **Seed Regulatory and Testing Branch**, 801 Summit Crossing Place, Suite C, Gastonia, North Carolina 28054-2193 Telephone: (704) 810-8870. <http://www.ams.usda.gov/lsg/seed.htm>.

#### **ITEM**

- 19a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;  
(2) the details of subsequent stages of selection and multiplication;  
(3) evidence of uniformity and stability; and  
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
- (1) identify these varieties and state all differences objectively;
  - (2) attach replicated statistical data for characters expressed numerically and demonstrate that these are clear differences; and
  - (3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
20. If "Yes" is specified (*seed of this variety be sold by variety name only, as a class of certified seed*), the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See Regulations and Rules of Practice, Section 97.103).
23. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
24. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.

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**22. CONTINUED FROM FRONT** (Please provide a statement as to the limitation and sequence of generations that may be certified.)

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**23. CONTINUED FROM FRONT** (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

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**24. CONTINUED FROM FRONT** (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

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According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

#200800301

To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

**Exhibit A - Origin and Breeding History**  
**'Anton' Hard White Winter Wheat**

200800301

Anton was developed using a modified bulk breeding procedure, followed by re-selection for uniformity of seed coat color. Anton was selected from the cross WA691213-27/N86L177//'Platte'. WA691213-27 is a soft white winter wheat breeding line developed by Washington State University. WA691213-27 was derived from the cross Brevor/CI 15923//Nugaines and is a sister line of the cultivar 'Dusty' (PI 486429). N86L177 (PI 559717) is a high-protein strong-gluten hard red winter wheat developed by USDA-ARS, and derived from the cross Nap Hal/'Lancer'/'Karlik 1'3/NS 622/4/'Centurk'/'GK-Tiszataj'/'Plainsman V'. Platte (P.V.P. Certificate # 9700012) is a low grain PPO hard white winter wheat developed by HybriTech Seed International, a former unit of Monsanto Company.

The final cross in the breeding of Anton was made in 1993. The F1 generation was grown in the field at Yuma, AZ in 1994. The only selection criterion applied at the F1 generation was fertility under Arizona climatic conditions. The F2 to F3 generations were advanced using the bulk breeding method in the field at Lincoln, NE in 1995 and 1996. The selection criteria applied were: winter-survival and resistance to soilborne mosaic virus (SBMV, natural infestation). In 1997, Anton was selected as a single F3-derived F4 head row, grown at Lincoln, NE. The selection criteria were resistance to leaf rust and SBMV and winter survival. In 1998, Anton was entered in an un-replicated F5 preliminary observation at Sidney, NE, with subsequent F6 and F7 generations tested in multi-location yield trials in Nebraska in 1999 and 2000. Selection during the F6 and F7 generations was based on grain yield, and Anton was retained as its average grain yield at multiple Nebraska locations did not differ significantly from Trego, a hard white wheat check cultivar. At this time, Anton was observed to be segregating for red and white grain color. White grain color was purified and fixed as follows. In 2000, ten uniformly white-grained heads were selected, and grown in single 3 m rows in the field at Yuma, Arizona. Seed harvested from these ten rows was combined, and increased. Anton then was submitted for testing in regional and state-wide trials.

Seed purification began in 2004. Seed harvested from the advanced yield trials at Lincoln, NE in 2004 was planted in an unreplicated strip plot at Yuma, AZ. In the fall of 2005, seed from Yuma, AZ was used to plant a breeder seed increase near Hemingford, NE. In 2006, a Foundation Seed increase was planted by the Nebraska Foundation Seed Division. Anton has been stable and uniform since 2000. The Nebraska Foundation Seed Division University of Nebraska-Lincoln, Lincoln, NE 68583 will have foundation seed available to qualified certified seed enterprises in 2008. The U.S. Department of Agriculture will not have seed for distribution. The seed classes will be Breeder, Foundation, Registered, and Certified. Seed supply and maintenance of the variety will be the responsibility of the University of Nebraska Foundation Seed Division. A seed sample of Anton has been deposited in the USDA-ARS, National Small Grain Collection, Aberdeen, ID, where it is maintained as PI 651044.

**Exhibit B - Statement of Distinctness**  
**'Anton' Hard White Winter Wheat**

Anton is most similar to the hard white wheat 'Platte' except that it produces the high-molecular-weight glutenin subunits 7+8 from the *Glu-B1b* allele. Platte produces subunits 20x+20y from *Glu-B1e*.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 2.5 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY  
PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MD 20705

Exhibit C

OBJECTIVE DESCRIPTION OF VARIETY  
Wheat (*Triticum* spp.)

NAME OF APPLICANT (S) Robert Graybosch	TEMPORARY OR EXPERIMENTAL DESIGNATION NW98S097	VARIETY NAME Anton
ADDRESS (Street and No. or RD No., City, State, Zip Code and Country) USDA-ARS, 314 Biochemistry Hall, East Campus University of Nebraska, Lincoln, NE 68583		FOR OFFICIAL USE ONLY PVPO NUMBER #200800301

## PLEASE READ ALL INSTRUCTIONS CAREFULLY:

Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in the first box (e.g.,    or   ) when number is either 99 or less or 9 or less respectively. Data for quantitative plant characters should be based on a minimum of 100 plants. Comparative data should be determined from varieties entered in the same trial. Royal Horticultural Society or any recognized color standard may be used to determine plant colors; designate system used: \_\_\_\_\_ Please answer all questions for your variety; lack of response may delay progress of your application.

## 1. KIND:

- 1 = Common  
2 = Durum  
3 = Club  
4 = Other (Specify) \_\_\_\_\_

## 2. VERNALIZATION:

- 1 = Spring  
2 = Winter  
3 = Other (Specify) \_\_\_\_\_

## 3. COLEOPTILE ANTHOCYANIN:

- 1 = Absent                      2 = Present

## 4. JUVENILE PLANT GROWTH:

- 1 = Prostrate              2 = Semi-Erect              3 = Erect

## 5. PLANT COLOR: (boot stage)

- 1 = Yellow-Green  
2 = Green  
3 = Blue-Green

## 6. FLAG LEAF: (boot stage)

- 1 = Erect                      2 = Recurved

- 1 = Not Twisted              2 = Twisted

- 1 = Wax Absent              2 = Wax Present

## 7. EAR EMERGENCE:

Number of Days (Average)

Number of Days Earlier Than \*

Same As \*

Number of Days Later Than \*

\* millennium

\*Relative to a PVPO-Approved Commercial Variety Grown in the Same Trial

## 8. ANTHOR COLOR:

- 1 = Yellow              2 = Purple

6

## 9. PLANT HEIGHT: (from soil to top of head, excluding awns)

cm (Average)

cm Taller Than

Same As

cm Shorter Than

*Millennium*

## 10. STEM:

## A. ANTHOCYANIN

1 = Absent 2 = Present

## B. WAXY BLOOM

1 = Absent 2 = Present

## C. HAIRINESS (last internode of rachis)

1 = Absent 2 = Present

## D. INTERNODE

1 = Hollow 2 = Semi-Solid 3 = Solid

Number of Nodes

## E. PEDUNCLE

1 = Erect 2 = Recurved 3 = Semi-Erect

cm Length

## F. AURICLE

Anthocyanin: 1 = Absent 2 = Present

Hair: 1 = Absent 2 = Present

## 11. HEAD: (At Maturity)

## A. DENSITY

1 = Lax  
2 = Middense (Laxidense)  
3 = Dense

## B. SHAPE

1 = Tapering  
2 = Strap  
3 = Clavate  
4 = Other (Specify) \_\_\_\_\_

## C. CURVATURE

1 = Erect  
2 = Inclined  
3 = Recurved

## D. AWNEDNESS

1 = Awnless  
2 = Apically Awnletted  
3 = Awnletted  
4 = Awned

## 12. GLUMES: (At Maturity)

## A. COLOR

1 = White  
2 = Tan  
3 = Other (Specify) \_\_\_\_\_

## B. SHOULDER

1 = Wanting 2 = Oblique  
3 = Rounded 4 = Square  
5 = Elevated 6 = Apiculate  
7 = Other (Specify) \_\_\_\_\_

## C. SHOULDER WIDTH

1 = Narrow  
2 = Medium  
3 = Wide

## D. BEAK

1 = Obtuse  
2 = Acute  
3 = Acuminate

## E. BEAK WIDTH

1 = Narrow  
2 = Medium  
3 = Wide

## F. GLUME LENGTH

1 = Short (ca. 7 mm)  
2 = Medium (ca. 8 mm)  
3 = Long (ca. 9 mm)

## G. WIDTH

1 = Narrow (ca. 3 mm)  
2 = Medium (ca. 3.5 mm)  
3 = Wide (ca. 4 mm)

## H. PUBESCENCE

1 = Not Present  
2 = Present

6

## 13. SEED:

## A. SHAPE

- ☒ 1 = Ovate  
☐ 2 = Oval  
☐ 3 = Elliptical

## B. CHEEK

- ☒ 1 = Rounded  
☐ 2 = Angular

## C. BRUSH

- ☒ 2 1 = Short  
☐ 2 = Medium  
☐ 3 = Long
- ☒ 1 1 = Not Collared  
☐ 2 = Collared

## D. CREASE

- ☒ 1 1 = Width 60% or less of Kernel  
☐ 2 = Width 80% or less of Kernel  
☐ 3 = Width Nearly as Wide as Kernel
- ☒ 2 1 = Depth 20% or less of Kernel  
☐ 2 = Depth 35% or less of Kernel  
☐ 3 = Depth 50% or less of Kernel

## E. COLOR

- ☒ 1 1 = White  
☐ 2 = Amber  
☐ 3 = Red  
☐ 4 = Other (Specify) \_\_\_\_\_

## F. TEXTURE

- ☒ 1 1 = Hard  
☐ 2 = Soft  
☐ 3 = Other (Specify) \_\_\_\_\_

## G. PHENOL REACTION (See Instructions)

- ☐ 1 = Ivory  
☐ 2 = Fawn  
☐ 3 = Light Brown  
☐ 4 = Dark Brown  
☐ 5 = Black

## H. SEED WEIGHT

- ☒ 2 ☒ 9 g/1000 Seed (whole number only)

## I. GERM SIZE

- ☒ 2 1 = Small  
☐ 2 = Midsize  
☐ 3 = Large

## 14. DISEASE: PLEASE INDICATE THE SPECIFIC RACE OR STRAIN TESTED

(0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Intermediate 4 = Tolerant)

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> 2 Stem Rust ( <i>Puccinia graminis</i> f. sp. <i>tritici</i> ) | <input checked="" type="checkbox"/> 2 Leaf Rust ( <i>Puccinia recondita</i> f. sp. <i>tritici</i> )           |
| <input checked="" type="checkbox"/> 1 Stripe Rust ( <i>Puccinia striiformis</i> )                  | <input type="checkbox"/> 0 Loose Smut ( <i>Ustilago tritici</i> )   |
| <input type="checkbox"/> 0 Tan Spot ( <i>Pyrenophora tritici-repentis</i> )                        | <input type="checkbox"/> 0 Flag Smut ( <i>Urocystis agropyri</i> )  |
| <input type="checkbox"/> 0 Halo Spot ( <i>Selenophoma donacis</i> )                                | <input type="checkbox"/> 0 Common Bunt ( <i>Tilletia tritici</i> or <i>T. laevis</i> )                        |
| <input type="checkbox"/> 0 Septoria nodorum (Glume Blotch)   | <input type="checkbox"/> 0 Dwarf Bunt ( <i>Tilletia controversa</i> )   |
| <input type="checkbox"/> 0 Septoria avenae (Speckled Leaf Disease)                                 | <input type="checkbox"/> 0 Karnal Bunt ( <i>Tilletia indica</i> )   |
| <input type="checkbox"/> 0 Septoria tritici (Speckled Leaf Blotch)                                 | <input type="checkbox"/> 0 Powdery Mildew ( <i>Erysiphe graminis</i> f. sp. <i>tritici</i> )                  |
| <input type="checkbox"/> 1 Scab ( <i>Fusarium</i> spp.)  | <input type="checkbox"/> 0 "Snow Molds"   |
| <input type="checkbox"/> 0 "Black Point" (Kernel Smudge)   | <input type="checkbox"/> 0 Common Root Rot ( <i>Fusarium</i> , <i>Cochliobolus</i> and <i>Bipolaris</i> spp.) |
| <input type="checkbox"/> 0 Barley Yellow Dwarf Virus (BYDV)  | <input type="checkbox"/> 0 Rhizoctonia Root Rot ( <i>Rhizoctonia solani</i> )                                 |
| <input checked="" type="checkbox"/> 2 Soilborne Mosaic Virus (SBMV)                                | <input type="checkbox"/> 0 Black Chaff ( <i>Xanthomonas campestris</i> pv. <i>translucens</i> )               |
| <input type="checkbox"/> 0 Wheat Yellow (Spindle Streak) Mosaic Virus                              | <input type="checkbox"/> 0 Bacterial Leaf Blight ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )          |
| <input type="checkbox"/> 1 Wheat Streak Mosaic Virus (WSMV)  | <input type="checkbox"/> Other (Specify) _____  |
| <input type="checkbox"/> Other (Specify) _____   | <input type="checkbox"/> Other (Specify) _____  |
| <input type="checkbox"/> Other (Specify) _____   | <input type="checkbox"/> Other (Specify) _____  |
| <input type="checkbox"/> Other (Specify) _____   | <input type="checkbox"/> Other (Specify) _____  |

## 15. INSECT: (0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Intermediate 4 = Tolerant)

PLEASE SPECIFY BIOTYPE (where needed)

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> 1 Hessian Fly ( <i>Mayetiola destructor</i> ) | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> 0 Stem Sawfly ( <i>Cephus</i> spp.)                      | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> 0 Cereal Leaf Beetle ( <i>Oulema melanopa</i> )          | <input type="checkbox"/> Other (Specify) _____ |



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Exhibit C (Wheat)

15. INSECT: (continued) (0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Intermediate 4 = Tolerant)

PLEASE SPECIFY BIOTYPE (Where Needed)

<input checked="" type="checkbox"/> Russian Aphid ( <i>Diuraphis noxia</i> )	<input type="checkbox"/> Other (Specify) _____
<input checked="" type="checkbox"/> Greenbug ( <i>Schizaphis graminum</i> )	<input type="checkbox"/> Other (Specify) _____
<input checked="" type="checkbox"/> Aphids	<input type="checkbox"/> Other (Specify) _____

16. ADDITIONAL INFORMATION ON ANY ITEM ABOVE, OR GENERAL COMMENTS:

8

**Exhibit D - Additional Description of the Variety:**

End-use quality evaluations of Anton (see Table 1 below) were conducted by the USDA-ARS GMPRC, Manhattan, KS, on samples obtained from the 2003 and 2004 NRPN, composited by agro-ecological production zone. Six samples were evaluated from this two year period. Anton displayed significantly harder kernels, longer Mixograph and bake mix times, and greater Mixograph tolerance scores than the three check cultivars. Levels of flour PPO in Anton were significantly lower than in the control cultivars, and this contributed to significantly lower changes in noodle L\* (brightness values) over a 24 hour test period (Table 1). Flour PPO levels of Anton, over the 2003 and 2004 harvest seasons, were significantly lower than all other entries in the NRPN. Few additional significant differences (Table 3) in quality of Anton, relative to the controls, were noted. Grain PPO activity of Anton, evaluated from samples collected from nine locations of the University of Nebraska wheat variety trial in 2005, did not differ significantly from the low PPO cultivar Platte, and was significantly lower than that of all other white wheats in the trial (Table 2).

Table 1. End-use quality attributes of Anton compared to check cultivars from the 2003 and 2004 Northern Regional Performance Nursery.

Cultivar	Kernel weight (mg)	Grain hardness score	Grain protein concentration g/kg)	Flour		Flour ash content (g/kg)	Flour PPO†	Δ L‡	Δ a‡	Δ b‡
				milling yield (g/kg)						
Nekota	32.3	64.8	131	65.9		3.1	0.509	-10.157	1.025	1.335
Nuplains	28.5	73.4	135	66.7		3.3	0.473	-10.717	1.100	1.923
Darrell	30.8	74.5	134	67.2		3.5	0.424	-10.705	1.055	2.750
Anton	29.4	80.3	136	65.0		4.0	0.162	-9.028	0.838	3.637
I.s.d.										
(0.05)	2.0	6.1	ns	ns		ns	0.091	-0.575	ns	0.965

Cultivar	Flour protein concentration g/kg)	Mixograph		Mixograph tolerance (0-6)	Bake		Bake mix time (min)	Crumb score (0-5)	Loaf volume (ml)
		water absorption (g/kg)	time (min)		water absorption (g/kg)				
Nekota	111	631	3.3	3	631		4.4	3	883
Nuplains	115	638	2.7	2	624		3.4	4	917
Darrell	115	639	3.8	4	632		5.3	3	878
Anton	116	642	4.4	5	649		6.5	3	883
I.s.d.									
(0.05)	ns	ns	0.6	1.0	ns		1.0	ns	ns

†PPO = polyphenol oxidase activity defined as a change of 0.001 absorbance unit (AU)/min/mL  
Noodlemaking Properties - Change in alkaline noodle color over 24 hrs by Minolta colorimeter

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Table 2. Mean grain polyphenol oxidase (PPO) of Anton relative to additional hard white winter wheats from nine locations of the 2005 University of Nebraska wheat variety trial.

Line or cultivar	Grain PPO†
Platte	0.335
Anton	0.351
Antelope	0.733
NW97S139-1	0.774
Trego	0.786
Nuplains	0.799
NP-02	0.824
NW99L7068	0.899
L.S.D. (0.05)	0.092

†PPO = polyphenol oxidase activity defined as a change of 0.001 absorbance unit (AU)/min/mL

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

**EXHIBIT E**  
**STATEMENT OF THE BASIS OF OWNERSHIP**

1. NAME OF APPLICANT(S) The United States Government as represented by the Secretary of Agriculture.	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER NW98S097	3. VARIETY NAME Anton
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country)  USDA-ARS 314 Biochemistry Hall, East Campus, UNL, Lincoln, NE 68583	5. TELEPHONE (Include area code) 402-472-1563	6. FAX (Include area code) 402-472-4020
	7. PVPO NUMBER 200800301	

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. If no, please explain. ☒ YES ☐ NO9. Is the applicant (individual or company) a U.S. national or a U.S. based company? If no, give name of country. ☐ YES ☐ NO  
U.S. Government Agency10. Is the applicant the original owner? ☒ YES ☐ NO If no, please answer one of the following:

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

☐ YES ☐ NO If no, give name of country

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

☐ YES ☐ NO If no, give name of country

11. Additional explanation on ownership (Trace ownership from original breeder to current owner. Use the reverse for extra space if needed):

**PLEASE NOTE:**

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 0.1 hour per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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Form Approved OMB NO 0581-0055

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U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY  
PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MD 20705

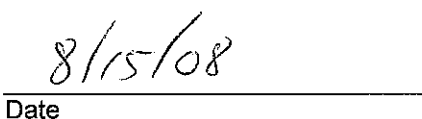
EXHIBIT F  
DECLARATION REGARDING DEPOSIT

NAME OF OWNER (S)  The United States Government as represented by the Secretary of Agriculture.	ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country) 314 Biochem Hall, East Campus University of Nebraska Lincoln, NE 68583	TEMPORARY OR EXPERIMENTAL DESIGNATION NW98S097
NAME OF OWNER REPRESENTATIVE (S)  Robert Graybosch	ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country) same as above	VARIETY NAME Anton  FOR OFFICIAL USE ONLY  PVPO NUMBER 200800301

I do hereby declare that during the life of the certificate a viable sample of propagating material of the subject variety will be deposited, and replenished as needed periodically, in a public repository in the United States in accordance with the regulations established by the Plant Variety Protection Office.

Anton has been deposited in the USDA-ARS National Small Grains Collection, Aberdeen, Idaho, and is housed as PI 651044.

  
Signature

  
Date